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### REMARKS

The Office Action dated 27 June 2005 has been reviewed, and the comments of the U.S. Patent Office have been considered. Claims 1, 4, 16, 17, 19 and 20 are currently amended, and claims 2, 3, 5-15, 18, 21 and 22 remain as originally presented. Thus, claims 1-22 are pending and are respectfully submitted for reconsideration by the Examiner.

Applicants thank the Examiner for indicating that claims 4-12, 14 and 15 contain allowable subject matter. Accordingly, claim 4 has been rewritten in independent form and is respectfully submitted to be allowable. Inasmuch as claims 5-12 depend, directly or indirectly, from allowable claim 4, these dependent claims are also respectfully submitted to be allowable for at least the same reasons as independent claim 4, as well as reciting additional features that further distinguish Applicants' invention over the prior art.

Claims 1 and 16 have been amended solely to correct a minor typographical error, and not for any reason related to patentability over the prior art.

Claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 1,801,153 to Gray. Claims 3, 13 and 16 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gray. Claims 17-20 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,678,955 to Takeshita et al. ("Takeshita"). And claims 21 and 22 were rejected under 35 U.S. C. § 103(a) as allegedly being unpatentable over Takeshita. These rejections are respectfully traversed because Gray and Takeshita fail to teach or suggest the claimed invention as a whole, as recited in independent claims 1, 16 and 17.

Independent claim 1 recites a tool for punching a metering orifice including, *inter alia*, "a tool axis" extending at an acute angle with respect to a "longitudinal axis" and "a pilot portion having a first surface disposed on a first plane generally transverse to the tool axis." Similarly, independent claim 16 recites an arrangement for forming orifices in a workpiece including, *inter alia*, a tool including "a tool axis" extending at an acute angle with respect to a "longitudinal axis" and "a pilot portion having a first surface disposed on a first plane generally transverse to the tool axis." Thus, Applicants' pilot portion is disposed at an acute angle with respect to the longitudinal axis along which first and second generally planar surfaces are disposed. Applicants' arrangement provides a number of advantages with respect to forming angled orifices, as discussed in paragraph 0025, for example.

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In contrast, Gray shows a punch 11 that is reciprocated up and down with respect to the blank 17, and in which a pilot 14 remains in a slot previously cut by a cutting portion 13. Specifically, Gray states at page 2, lines 36-56, that "[e]ach time the cutting edge 13 clears the top surface of the blank 17 on the up stroke of the tool, such blank is advanced until the front edge of the slot being cut contacts the pilot 14, the cutting edge 13 overlapping the blank." Thus, Gray fails to teach or suggest a tool axis that is angularly related with respect to a longitudinal axis, and fails to teach or suggest a pilot portion as recited in independent claims 1 and 16 for engaging a workpiece to begin forming an angled orifice.

Given the deficiencies of Gray, it is respectfully submitted that the rejections under 35 U.S.C. §§ 102(b) and 103(a) of independent claims 1 and 16 should be withdrawn. Moreover, inasmuch as claims 2, 3 and 13-15 depend, directly or indirectly, from allowable claim 1, these dependent claims are also respectfully submitted to be allowable for at least the same reasons as independent claim 1, as well as reciting additional features that further distinguish Applicants' invention over the prior art.

Independent claim 17 as amended recites a method of forming an orifice through a disc including, *inter alia*, displacing material forming a first orifice wall surface, "increasing the surface area on which the force is being applied so that a second orifice wall surface is formed," and "the second orifice wall surface being in addition to the first orifice wall surface." Support for this combination of features may be found in Applicants' specification as originally filed at, for example, paragraph 0037. As shown in Applicants' Figures 4D and 4E, Applicants' method results in the separate formation of two separate orifice walls 52 and 54. It is respectfully submitted that the prior art, including Takeshita, fails to teach the combination of features recited in Applicants' independent claim 17, and that the rejection under 35 U.S.C. §§ 102(e) should be withdrawn. Moreover, inasmuch as claims 18-22 depend, directly or indirectly, from allowable claim 17, these dependent claims are also respectfully submitted to be allowable for at least the same reasons as independent claim 17, as well as reciting additional features that further distinguish Applicants' invention over the prior art.

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**CONCLUSION**

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this Application and the prompt allowance of claims 1-22.

Should the Examiner feel that there are any issues outstanding after consideration of this reply, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution of the application.


**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 08-1641. **This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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